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Proposed Hydrogen Plant at Northam Solar Farm

Transport Impact Statement

PREPARED FOR:
Infinite Green Energy

June 2023

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TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	PROPOSED DEVELOPMENT	3
3	VEHICLE ACCESS AND PARKING.....	5
3.1	ACCESS.....	5
3.2	INTERNAL SITE TRAFFIC MOVEMENTS.....	7
3.3	PARKING	7
4	PROVISION FOR SERVICE VEHICLES	8
5	HOURS OF OPERATION	9
6	DAILY TRAFFIC VOLUMES AND VEHICLE TYPES	10
6.1	TRIP GENERATION	10
6.1.1	CONSTRUCTION STAGE TRAFFIC.....	10
6.1.2	OPERATIONAL STAGE TRAFFIC.....	11
6.2	IMPACT ON SURROUNDING ROADS.....	12
7	TRAFFIC MANAGEMENT ON THE FRONTAGE STREETS.....	13
7.1	EXISTING ROAD NETWORK.....	13
7.2	EXISTING TRAFFIC VOLUMES.....	14
7.3	FUTURE TRAFFIC VOLUMES.....	15
7.4	INTERSECTION TREATMENT.....	16
8	PUBLIC TRANSPORT ACCESS	18
9	PEDESTRIAN AND BICYCLE ACCESS	19
10	SITE SPECIFIC ISSUES	20
11	SAFETY ISSUES.....	23
12	CONCLUSIONS.....	24

APPENDIX A: PROPOSED SITE PLAN



REPORT FIGURES

Figure 1: Location of the subject site	1
Figure 2: Northam Solar Farm and Proposed Hydrogen Plant	3
Figure 3: Proposed Access.....	5
Figure 4: Northam – York Road looking northwest from existing level crossing	6
Figure 5: Existing level crossing from Northam - York Road	6
Figure 6: Category 1 RAVs up to 20m in length	8
Figure 7: Northam – York Road looking southeast (level crossing to the left)	13
Figure 8: Northam – York Road and existing level crossing.....	14
Figure 9: Future maximum operational phase peak hour traffic flows.....	16
Figure 10: Warrants for turn lanes on the major road.....	16

REPORT TABLES

Table 1: Trip generation of the proposed development – construction stage	10
Table 2: Trip generation of the hydrogen plant – operational stage.....	11
Table 3: Maximum total trip generation – operational stage	12



1 Introduction

This Transport Impact Statement has been prepared by Transcore on behalf of Infinite Green Energy (IGE) with regard to the proposed hydrogen production plant at the existing Northam solar farm.

The subject site is located approximately one kilometre east of the Northam townsite, on the northeast side of the Northam – York Road and the East Perth – Kalgoorlie railway line, as shown in **Figure 1**.

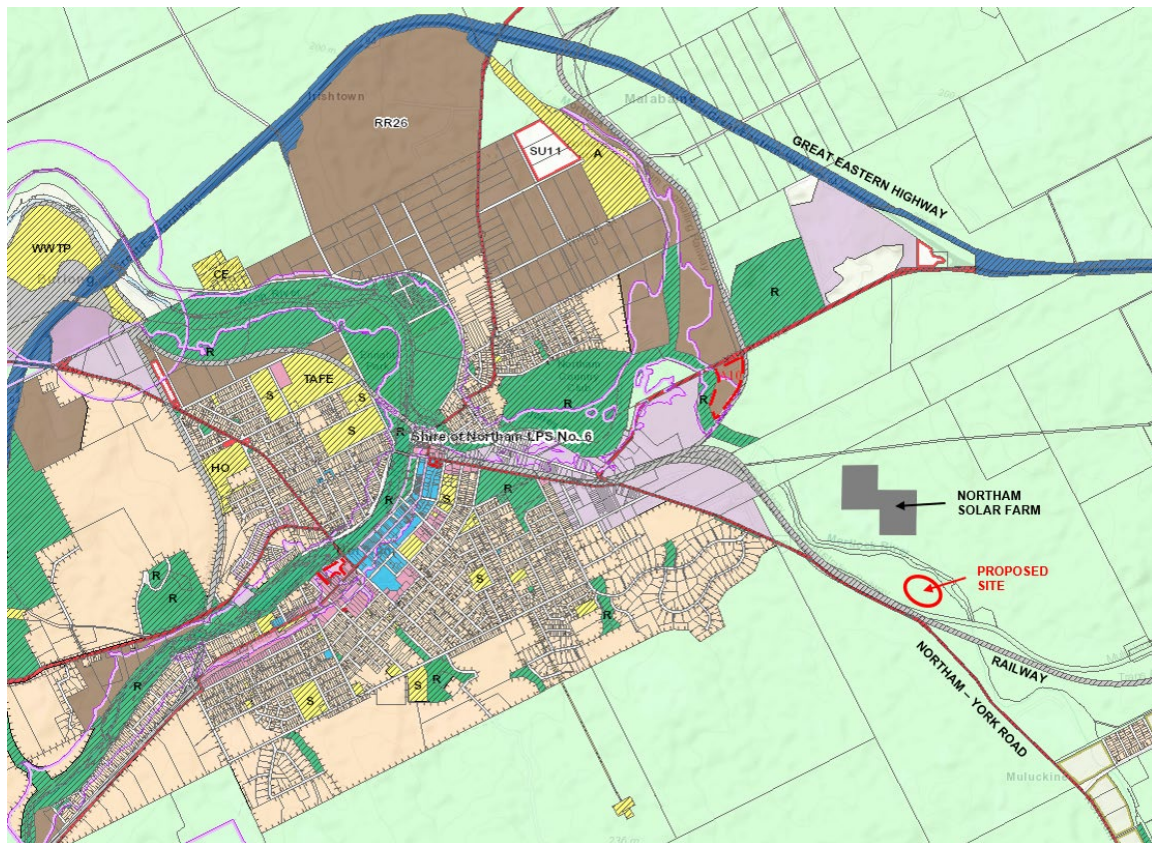


Figure 1: Location of the subject site

This revision of the Transport Impact Statement takes into consideration an increase in the traffic movements to and from the subject site to allow for potential future intensification of activity at the subject site.

The WAPC *Transport Impact Assessment Guidelines* (2016) state: “A *Transport Impact Statement (TIS)* is required for those developments that would be likely to generate moderate volumes of traffic¹ and therefore would have a moderate overall impact on the surrounding land uses and transport networks”. Section 6.1 of this report provides

¹ Between 10 and 100 vehicular trips per hour

details of the estimated trip generation for the proposed development. Accordingly, as the total peak hour vehicular trips are estimated to be less than 100 trips, a *Transport Impact Statement* is deemed appropriate for this development.



2 Proposed Development

Infinite Green Energy have acquired (long term lease) the Northam Solar Farm for the purpose of upgrading the facility to produce and distribute hydrogen gas to clients.

The proposed hydrogen production plant is located on the northeast side of the Northam – York Road and the East Perth – Kalgoorlie railway line and south of the Mortlock River, as shown in **Figure 1** and **Figure 2**. The layout of the proposed hydrogen plant is shown in **Appendix A**.

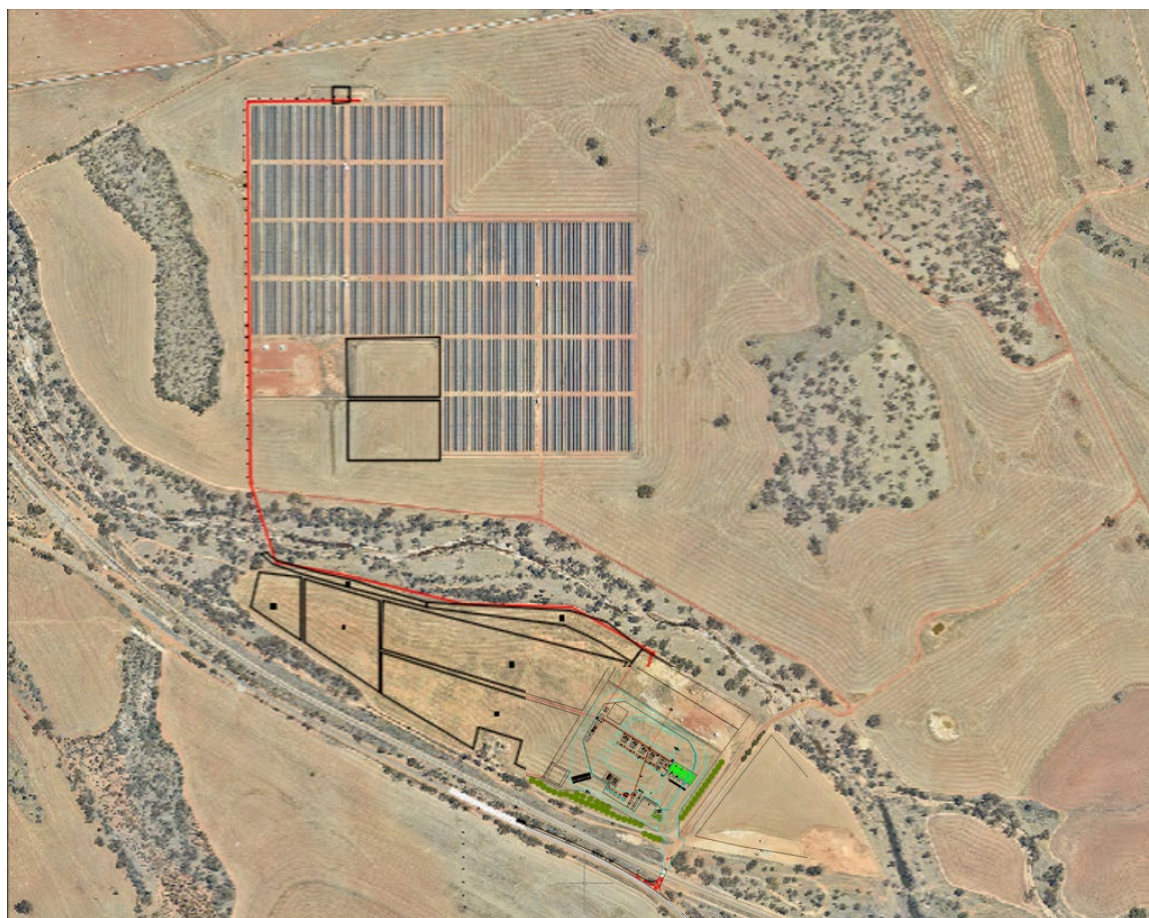


Figure 2: Northam Solar Farm and Proposed Hydrogen Plant

Access to the subject site is proposed to utilise the existing private level crossing of the railway line that currently provides access to the Northam Solar Farm from the Northam – York Road.

As this is a private level crossing it is currently subject to a Level Crossing Access Agreement (and Safety Interface Agreement) between DK West Investments Pty Ltd (the landowner) and Arc Infrastructure (the rail operator). Currently the only persons permitted to use that Level Crossing are personnel of DK West Investments Pty Ltd and their Permitted Users (as named in the agreement itself). Arc have advised that formal amendment to the agreement between Arc and DK West Investments will be

required to enable any such access. This would also require a review of the Safety Interface Agreement currently in place between the parties. Transcore understands that these matters are currently in the process of being addressed.

IGE has advised that they anticipate a construction period of up to 18 months for construction of the hydrogen plant, with production of hydrogen gas scheduled for the fourth quarter of 2023 subject to arrival of equipment with long lead times.

When the hydrogen plant is operational it is anticipated that hydrogen gas cylinders will be transported to and from the site in standard 20-foot or 40-foot shipping containers, using appropriate trucks up to 20m in length. Current advice from IGE indicates this is anticipated to involve 7 to 8 truckloads per day but allowance is made in this report for potential future intensification of activity in the operation of this site.

Due to the nature of the hydrogen cargo, appropriate safety measures are an important feature of this project. Accordingly, IGE are prepared to fund the installation of boom barriers and flashing lights at the railway level crossing. IGE also propose construction of a left turn lane on the Northam – York Road on approach to the level crossing to provide safe storage space clear of the through traffic lane for any inbound vehicle that needs to wait for a train to clear the level crossing.



3 Vehicle Access and Parking

3.1 Access

Access to the subject site is proposed to utilise the existing private level crossing of the railway line that currently provides access to the Northam Solar Farm from the Northam – York Road, as illustrated in **Figure 3**.

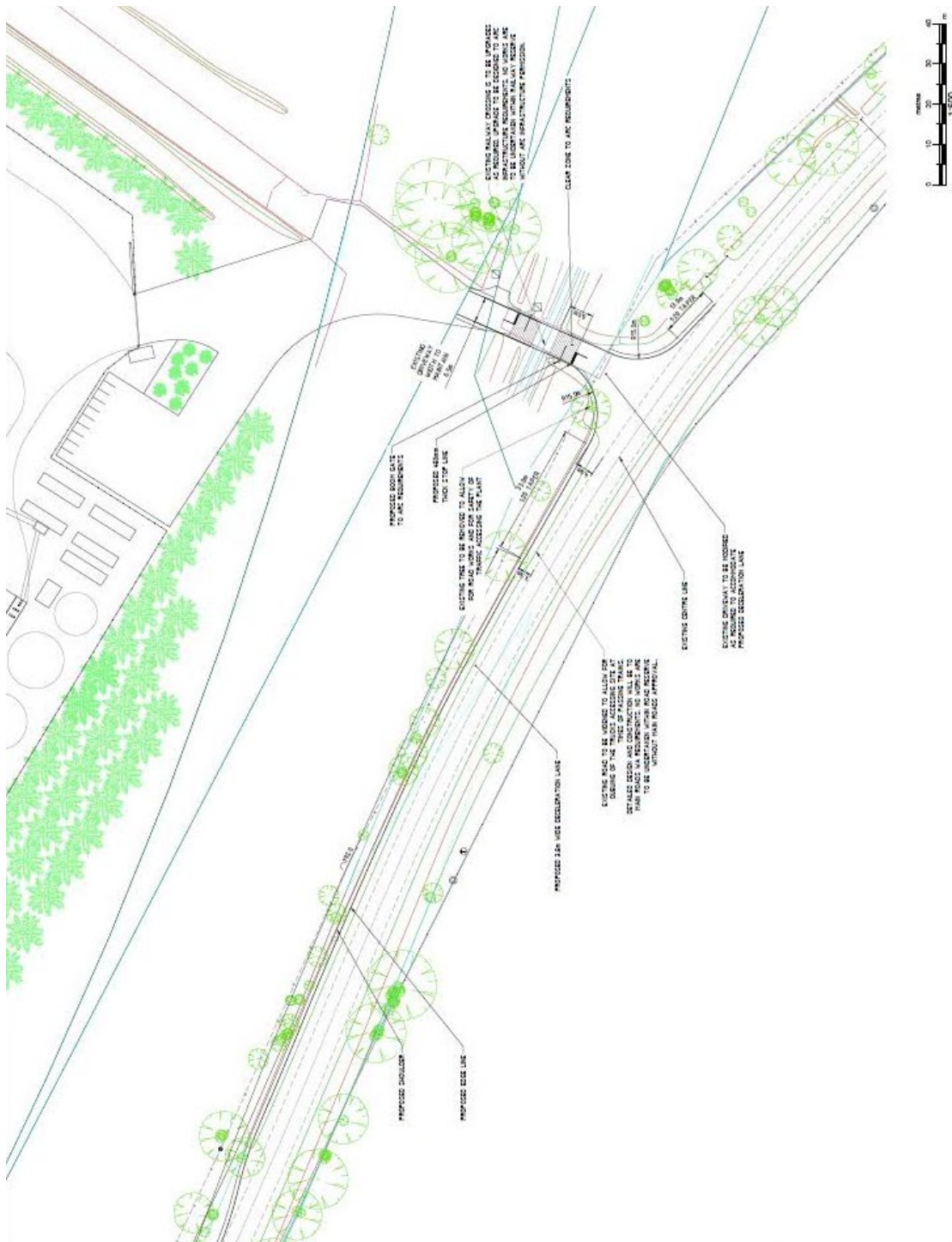


Figure 3: Proposed Access

As noted in section 2 of this report, Arc have advised that formal amendment to the existing agreement between Arc and DK West Investments will be required to enable this access.

IGE propose to fund the installation of boom gates and flashing lights at the railway level crossing. The design and installation of this upgraded level crossing would be undertaken by Arc Infrastructure.

IGE also propose construction of a left turn lane on the Northam – York Road on approach to the level crossing to provide safe storage space clear of the through traffic lane for any inbound vehicle that needs to wait for a train to clear the level crossing. **Figure 4** shows Northam – York Road immediately north of the level crossing where that left turn lane would be constructed.



Figure 4: Northam – York Road looking northwest from existing level crossing



Figure 5: Existing level crossing from Northam - York Road

The only physical constraint on vehicle access to and from the subject site via this level crossing relates to the queuing space available between the Northam – York Road and the railway line to accommodate a vehicle waiting to turn right out onto that road. The distance from the closest rail to the edge of the traffic lane is approximately 28m and 5m clearance distance is required (3m from the nearest rail and 2m from the edge of the through road²) leaving 23m available to accommodate a vehicle waiting to turn right onto the Northam – York Road. Accordingly, Main Roads WA has advised that the longest vehicle that should be permitted to use this access would be 20m in length.

3.2 Internal Site Traffic Movements

The main vehicle movements within the site for the hydrogen production operation will be the trucks transporting hydrogen from the site. Trucks will enter via the security gate at the southeast corner of the site, immediately to the east of the security hut. These trucks will travel in a clockwise direction within the loading area as shown and exit via the same security gate.

A parking area for ten vehicles is shown on the site plan at **Appendix A**, located outside of the security fence immediately to the west of the security hut.

3.3 Parking

The proposed development provides for all parking requirements on-site, as discussed above.

During construction the anticipated demand is in the order of 15 to 20 vehicles per day.

During the subsequent operational phase parking demand of the hydrogen plant is anticipated to be in the order of 5 light vehicles and typically one or two trucks (or heavy vehicle combinations up to 20m in length).

Additional parking would be available within a separate, fenced, ring road outside of the main security fence all the way around the hydrogen plant, which would cater for any future increase in parking demand associated with future intensification of operations.

² Source: Railway Crossing Control in Western Australia Policy and Guidelines (Main Roads WA, April 2017), section 13.1.

4 Provision for Service Vehicles

As discussed in section 3.1, the largest vehicles that will be permitted to access the site via the existing level crossing from the Northam – York Road will be 20m in length.

Subject to relevant height, width and weight limits, the largest vehicles allowed on virtually all roads in Western Australia without a special permit or order are semi-trailers up to 19m in length or heavy rigid vehicles up to 12.5m in length.

A 20m long vehicle would require a permit or order from Main Roads WA as a Restricted Access Vehicle (RAV). Specification of this size vehicle is consistent with RAV Network 1, which allows various vehicle and trailer combinations up to 20m in length, as illustrated in **Figure 6**. Almost all roads in Western Australia are included in RAV Network 1, including the Northam – York Road.

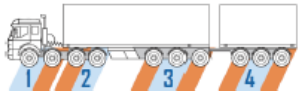
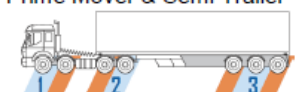
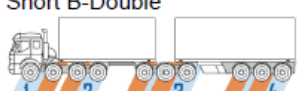
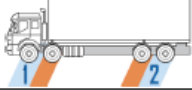

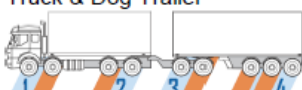

Category 1 RAVs				
Category	Vehicle Description	Length	Max. Mass	Approved Network
1A	Prime Mover, Semi Trailer & Pig Trailer 	≤20 m	50 t	Tandem Drive Network 1
1B	Prime Mover & Semi Trailer 	≤19.0 m	48.5 t	Tandem Drive Network 1
1C	Short B-Double 	≤20 m	50 t	Tandem Drive Network 1
Category 1 RAVs				
Category	Vehicle Description	Length	Max. Mass	Approved Network
1A	Rigid Truck 	≤12.5 m	28.5 t	Tandem Drive Network 1
1B	Truck & Pig Trailer 	≤20 m	46.5 t	Tandem Drive Network 1
1C	Truck & Dog Trailer 	≤20 m	50 t	Tandem Drive Network 1
1D	Car Carrier Truck & Trailer 	≤20 m	46.5 t	Tandem Drive Network 1

Figure 6: Category 1 RAVs up to 20m in length

5 Hours of Operation

The timing of construction operations will comply with any restrictions imposed by the Town of Northam as conditions of approval of this proposed development, if required.

The previous vehicle and traffic management plan for the construction of the Northam Solar Farm in 2017-2018 indicated most traffic movements would be from 7am to 5pm, which gives an indication of likely construction timing.

The proposed hydrogen plant will be powered by electricity from the solar farm and will therefore operate mainly during daylight hours. However, transport of hydrogen gas cylinders to and from the site would potentially occur at any time of the day to suit the needs of clients and transport operators.

It is anticipated that IGE will seek unrestricted use of the existing level crossing (in terms of time of day and days of the week) for access to and from the site.

6 Daily Traffic Volumes and Vehicle Types

6.1 Trip Generation

The trip generation associated with the proposed project can be separated into two discrete stages: construction stage and operational stage.

6.1.1 Construction Stage Traffic

Current advice from IGE indicates construction traffic of 15 to 20 vehicles per day (i.e. 30-40 vpd two-way total), with a construction period of up to 18 months.

Detailed information that has been provided for the previous construction of the solar farm on this property in 2017 – 2018 indicated up to 30% of construction traffic would be heavy vehicles during the busiest months of the construction period for that project.

Based on that heavy vehicle proportion and traffic patterns for that previous construction project it is estimated that the busiest months of the construction period for the proposed hydrogen plant would involve 20 vehicles per day (round trips) (14 light vehicles and 6 heavy vehicles). Construction staff were anticipated to be onsite between 7am and 5pm, so most of those light vehicles would arrive around 7am and depart around 5pm, whereas the heavy vehicle movements would be spread throughout that period and would seldom involve more than one inbound and one outbound heavy vehicle per hour. Accordingly, the anticipated typical construction traffic flows are shown in **Table 1**.

Table 1: Trip generation of the proposed development – construction stage

Period	Direction	Workforce traffic		HV traffic		Total Traffic	
		Split	Total	Split	Total	Split	Total
Morning Peak	Inbound	14	14	1	2	15	16
	Outbound	0		1		1	
Typical Hour	Inbound	0	0	1	2	1	2
	Outbound	0		1		1	
Afternoon Peak	Inbound	0	14	1	2	1	16
	Outbound	14		1		15	

6.1.2 Operational Stage Traffic

When the hydrogen plant is operational it is anticipated that hydrogen gas cylinders will be transported to and from the site in standard 20-foot or 40-foot shipping containers, using appropriate trucks up to 20m in length. Current advice from IGE indicates this is anticipated to involve 7 to 8 truck loads per day (i.e. 14 to 16 vpd two-way total truck movements). On-site staff numbers would be low and are anticipated to involve approximately 5 light vehicles per day (i.e. 10 vpd two-way total). This indicates initial operational traffic flows of up to 26 vpd two-way total.

Accordingly, the anticipated typical operational traffic flows are shown in **Table 2**.

Table 2: Trip generation of the hydrogen plant – operational stage

Period	Direction	Staff traffic		HV traffic		Total Traffic	
		Split	Total	Split	Total	Split	Total
Morning Peak	Inbound	5	5	1	2	6	7
	Outbound	0		1		1	
Typical Hour	Inbound	0	0	1	2	1	2
	Outbound	0		1		1	
Afternoon Peak	Inbound	0	5	1	2	1	7
	Outbound	5		1		6	

However, to ensure a robust assessment and to allow for potential additional growth of operational traffic flows in future, the applicant has requested that future maximum daily traffic generation be increased to 128 vpd with up to 80% of this total traffic being heavy vehicles (i.e. 26 light vehicles and 102 heavy vehicle movements).

For this maximum traffic scenario analysis, the additional light vehicle movements are assumed to be additional staff movements during the AM and PM peak periods. It is assumed that the additional heavy vehicle movements would be spread throughout the day, with only about 10% occurring during the AM peak hour and 10% during the PM peak hour.

The corresponding maximum total traffic generation (128vpd) during the operational phase is shown in **Table 3**.



Table 3: Maximum total trip generation – operational stage

Period	Direction	Staff traffic		HV traffic		Total Traffic	
		Split	Total	Split	Total	Split	Total
Morning Peak	Inbound	13	13	5	10	18	23
	Outbound	0		5		5	
Typical Hour	Inbound	0	0	5	10	5	10
	Outbound	0		5		5	
Afternoon Peak	Inbound	0	13	5	10	5	23
	Outbound	13		5		18	

6.2 Impact on Surrounding Roads

The WAPC *Transport Impact Assessment Guidelines (2016)* provides guidance on the assessment of traffic impacts:

“As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where the development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.”

As discussed in sections **6.1.1** and **6.1.2** of this report the maximum anticipated traffic impact from the proposed development will occur during the construction stage of the project and would only result in up to an additional 23 vehicle trips per hour (vph) on the access road and the Northam – York Road.

This is significantly less than the quoted WAPC threshold of 100vph (per lane) and therefore does not warrant further detailed analysis. Accordingly, the impact on the surrounding road network will not be significant.

7 Traffic Management on the Frontage Streets

The proposed hydrogen production plant is located on the northeast side of the Northam – York Road and the East Perth – Kalgoorlie railway line, east of Northam townsite, as shown in **Figure 1**.

7.1 Existing Road Network

Northam – York Road, in the vicinity of the subject site, is a two-lane rural road with 7m sealed width and unsealed shoulders on each side. The speed limit on this section is 110km/h.



Figure 7: Northam – York Road looking southeast (level crossing to the left)

Northam – York Road is a *State Road* controlled by Main Roads WA and is classified as a *Primary Distributor* road in the Main Roads WA functional road hierarchy.

The access road from Northam – York Road to the subject site is an unsealed, private road.

This access road has a sealed width of approximately 6m at the railway crossing and is sealed for a distance of approximately 16m southwest of the railway crossing and 10m on the northeast side, as shown in **Figure 8**.



Figure 8: Northam – York Road and existing level crossing

7.2 Existing Traffic Volumes

Traffic count data obtained from the Main Roads WA website documents a 2022/23 traffic count on Northam – York Road south of Carter Rd (Northam – Pithara Rd), which is about 8km further southeast from the subject site. That count recorded average weekday traffic (AWT) flows of 1,389 vehicles per day (vpd) with 20.1% being heavy vehicles. The peak hour of traffic flows occurred between 7:45 – 8:45am and 3:45 – 4:45pm with 123 vehicles per hour (vph) in both peaks but relatively consistent traffic volumes ranging between 88 vph and 123vph occur throughout the 7am to 6pm period at that location.

Transcore undertook a manual traffic count from 4:00 – 5:00pm on 16 June 2022 at the access road intersection on Northam – York Road to the subject site, which recorded a total of 145 vph (90 southbound and 55 northbound) on Northam – York Road at the subject site location, although only 6.2% were heavy vehicles. This indicates slightly higher total traffic flows on this section of Northam – York Road closer to the Northam townsite but fewer heavy vehicles.

There were no traffic movements across the level crossing during the 4-5pm survey period on 16 June 2022, which corresponds to the anticipated existing situation of minimal traffic flows on this existing private access road.

7.3 Future Traffic Volumes

In section 6.1 of this report, it is indicated that the majority of site traffic is anticipated to arrive around 7am and depart around 5pm during the construction period. Timing of arrival and departure peaks during the operational period are not yet known but may coincide with existing road network peak periods (7:45 – 8:45am and 3:45 – 4:45pm). Accordingly, to ensure robust assessment, we will utilise the existing AM and PM peak traffic flows on the Northam – York Road as the base traffic flows for traffic calculations.

The 2022/23 count on Northam – York Road south of Carter Rd (Northam – Pithara Rd) has the following traffic flows during the AM and PM peak hours:

- 7:45 – 8:45am: 84 northbound / 39 southbound
- 3:45 – 4:45pm: 44 northbound / 79 southbound

The manual traffic count at the site access intersection on 16 June 2022 recorded 55 northbound / 90 southbound (145 vph total) during the 4-5pm peak period. This is approximately 18% higher than the corresponding count at the other site (123 vph total), so the 7:45 – 8:45am count at the other site will be factored up by 18% to provide AM peak hour base traffic flows in the vicinity of the subject site. The resulting base traffic flows on Northam – York Road at this location are therefore as follows:

- AM peak hour: 99 northbound / 46 southbound
- PM peak hour: 55 northbound / 90 southbound

The highest traffic generation by the subject site will occur during the operational period. For this analysis the maximum future peak hour traffic generation during the operational period (as set out in Table 5) is anticipated to be as follows:

- AM peak hour: 18 in / 5 out
- PM peak hour: 5 in / 18 out

All of the hydrogen plant traffic is anticipated to travel to and from the northwest on Northam – York Road. The majority of the potential additional future traffic generated by the site is also anticipated to travel to and from the northwest but allowance is made for approximately 10% to travel to and from the southeast on Northam – York Road.

The resultant future operational phase maximum peak hour traffic flows at the Northam – York Rd / site access road intersection are shown in **Figure 9**. The traffic flows shown on Northam – York Road assume that site traffic peak would coincide with road network peak, as a worst-case scenario to ensure robust assessment.

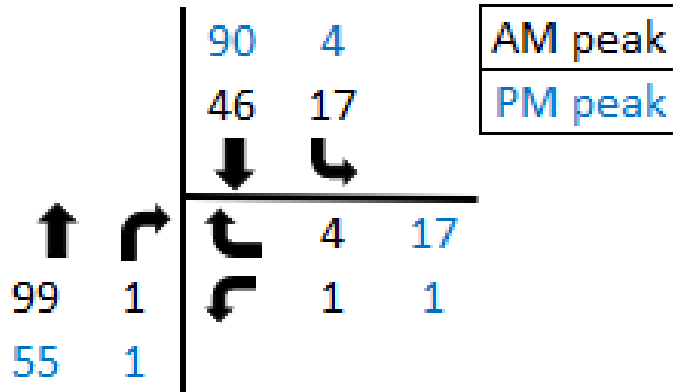


Figure 9: Future maximum operational phase peak hour traffic flows

7.4 Intersection Treatment

In a normal traffic situation, the warrants for turn lane treatments (eg. construction of left turn lanes or right turn lanes on the major road) are as set out in Figure 2.26 of *Austrroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings*. The relevant graph for design speed greater than 100km/h on the major road is Figure 2.26a, as shown below.

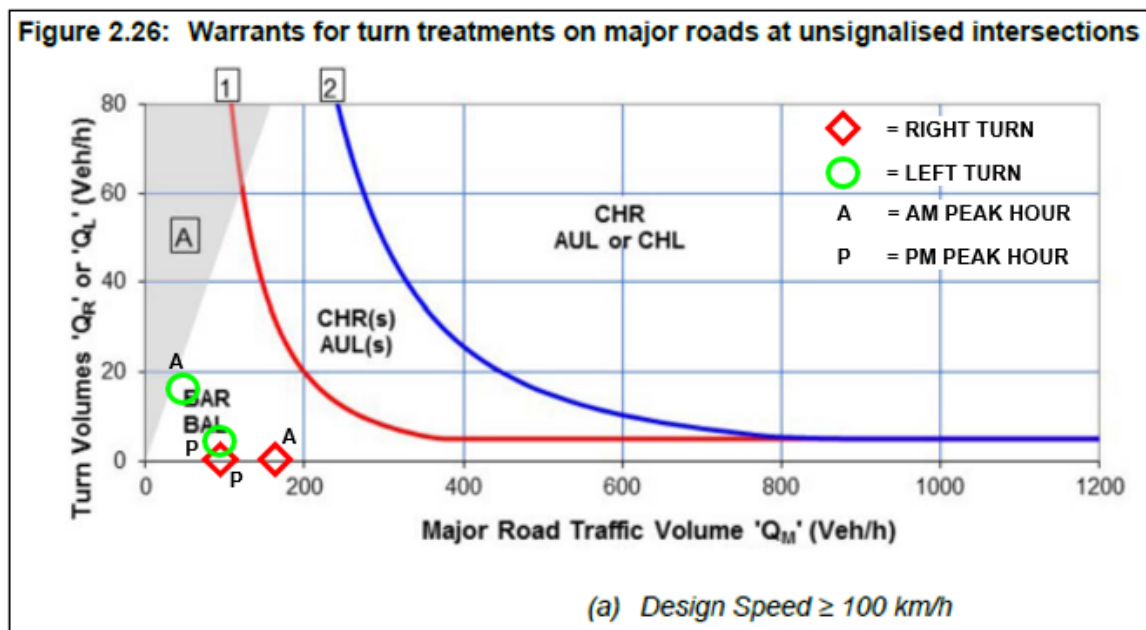


Figure 10: Warrants for turn lanes on the major road

The future maximum operational phase peak hour traffic flows shown in **Figure 9** are plotted on that graph in **Figure 10**. This demonstrates that the modelled peak traffic flows do not warrant provision of turn lanes under that Austrroads guideline.

As virtually all of the site-generated traffic is anticipated to turn left into the access road from Northam – York Road (inbound) and right out from the access road onto

Northam – York Road, there is no need for a right turn lane on Northam – York Road and the only upgrade that may be required is a left turn lane on Northam – York Road.

However, the applicant still proposes to construct an auxiliary left turn lane treatment (AUL) on the Northam – York Road on approach to the level crossing to provide safe storage space clear of the through traffic lane for any inbound vehicle that needs to wait for a train to clear the level crossing. After discussion with Main Roads WA this left turn deceleration lane has been designed as 250m total length which will provide full deceleration distance and storage for vehicles clear of the through traffic lanes on the Northam – York Road.

As noted in section 3.1, the distance from the closest rail to the edge of the traffic lane is approximately 28m and 5m clearance distance is required, leaving 23m available to accommodate a vehicle waiting to turn right onto the Northam – York Road. No vehicles longer than 20m in length will be permitted to use this access, as advised by Main Roads WA.

If it is ever necessary for any vehicles longer than 20m to use this railway crossing (eg. if a crane has to be transported to and from the site during the construction phase), this would require prior approval by Main Roads WA and the rail operator and appropriate traffic management (including a traffic management plan approved by Main Roads WA) to ensure that vehicle would have priority for the right turn out onto Northam – York Road and would not obstruct the railway crossing.

8 Public Transport Access

Due to the type and location of the proposed development the availability of public transport services is not relevant.

9 Pedestrian and Bicycle Access

Due to the type and location of the proposed development the availability of pedestrian and bicycle access on the surrounding road network is not relevant.

The site plan at Appendix A has security controlled access at the southeast corner of the site controlled by the security hut. The plan also shows two personnel escape gates near the northeast and northwest corners of the site in case of an emergency.

10 Site Specific Issues

One site specific issue has been identified in relation to this project, which is the proposed access via the existing level crossing of the East Perth – Kalgoorlie railway line.

Based on preliminary advice from Main Roads WA (level crossing safety and policy section) we understand that Arc undertook an ALCAM (Australian Level Crossing Assessment Model) assessment of this level crossing in 2018 in relation to the construction of the Northam Solar Farm. It is understood that the main issue identified related to vehicle storage distance between the railway line and Northam – York Road, as discussed in section 3.1.

Due to the nature of the product being transported, appropriate safety measures are an important feature of this project. Accordingly, IGE are prepared to fund the installation of boom barriers and flashing lights at the railway level crossing. As noted in section 3.1, the distance from the closest rail to the edge of the traffic lane is approximately 28m and 5m clearance distance is required, leaving 23m available to accommodate a vehicle waiting to turn right onto the Northam – York Road. Accordingly, Main Roads WA has advised that the longest vehicle that should be permitted to use this access would be 20m in length. IGE have acknowledged this restriction on maximum vehicle length.

Main Roads WA (level crossing safety and policy section) have recently undertaken updated ALCAM assessment of this level crossing for the construction and operational phases of this project, based on the traffic generation documented in the February 2023 version of this report and again for this current version of the report.

ALCAM assessment has now considered 7 separate scenarios:

- “Current LXM assessment” = during construction of the Solar Farm (existing level crossing with existing stop sign control), 25vpd and 50% heavy vehicles: ALCAM risk score = 0.00268
- “Proposal 1” = Hydrogen Plant & Solar Farm fully operational (existing stop signs replaced with active flashing light controls), 36vpd and 45% heavy vehicles: ALCAM risk score = 0.00182
- “Proposal 2” = Hydrogen Plant & Solar Farm fully operational (existing level crossing with existing stop sign control), 36vpd and 45% heavy vehicles: ALCAM risk score = 0.00248
- “Proposal 3” = Hydrogen Plant construction & Solar Farm operational (existing level crossing with existing stop sign control), 50vpd and 30% heavy vehicles: ALCAM risk score = 0.0024
- “Proposal 4” = existing situation = Solar Farm operational (existing level crossing with existing stop sign control), 10vpd and 5% heavy vehicles: ALCAM risk score = 0.00127

- “Proposal A” = Hydrogen Plant & Truck Parking Facility & Solar Farm fully operational (existing stop signs replaced with active flashing light controls), 128vpd and 80% heavy vehicles: ALCAM risk score = 0.00321
- “Proposal B” = Hydrogen Plant & Truck Parking Facility & Solar Farm fully operational (existing stop signs replaced with boom gate controls), 128vpd and 80% heavy vehicles: ALCAM risk score = 0.0019

These results indicate that an ALCAM risk score of 0.00268 occurred during the previous construction period for the Solar Farm. The existing level crossing (stop sign control) was deemed satisfactory for that construction period.

During construction of the Hydrogen Plant the existing level crossing (stop sign control) ALCAM risk score will increase again (0.0024) but will still be less than during the Solar Farm construction period.

In the maximum future traffic scenario (128vpd) the level crossing (with existing stop signs replaced with active flashing light controls) ALCAM risk score would be 0.00321, which would be slightly higher than during the Solar Farm construction period. This risk score would be reduced significantly (0.0019) if the existing stop signs are replaced with boom barriers in addition to flashing lights.

Based on preliminary advice from Main Roads WA (level crossing safety and policy section) it is noted that it is not the ALCAM assessment that determines the need for a level crossing to be upgraded from Stop sign control to flashing lights and boom barrier control. In Western Australia the *Railway Crossing Control in Western Australia Policy and Guidelines* (Main Roads WA) “are to be applied to all railway crossings on public roads throughout Western Australia, and can be used as a reference for managing and assessing railway crossing control at railway crossings on non-public roads”.

The warrants for determining the type of railway crossing control that is required use formulae that calculate a weighted conflict score, which is the product of average daily traffic and average number of train movements per week, weighted by factors relating to vehicle and train speeds, proportion of heavy vehicles in that daily traffic, and road gradient. Boom barriers are considered warranted when the weighted conflict score is greater than 700,000 (or flashing lights only at 14,000) but with the relatively low traffic volumes associated with the proposed development (i.e. 30-40 vpd during construction and up to 128 vpd during operational phase), upgrading to boom barrier control may not be warranted by road and rail traffic volumes alone.

Nonetheless, due to the volatile nature of the product being transported and the economic and environmental importance of the success of this project, it is considered that high priority must be given to safety considerations.

Accordingly, we are advised that IGE are fully supportive of installation of boom barriers and are prepared to fund the installation of boom barriers and flashing lights at this level crossing to address any potential concern about this proposed access.

In addition, Main Roads WA (level crossing safety and policy section) has advised that the existing sealed road panel at the level crossing should be extended southwards to

connect to the Northam - York Road and should also extend 50m north of the crossing.

To accommodate simultaneous two-way truck traffic across the level crossing, it is also recommended that the sealed width of the crossing should also be increased to 7 metres to accommodate two 3.5m traffic lanes.

Main Roads WA have also recommended the installation of 'Keep Clear' hatch markings and associated signage to limit any potential for queuing over the crossing.



11 Safety Issues

The only traffic-related safety issues that have been raised in relation to this project relate to the proposed access route to and from the Northam – York Road via the existing level crossing across the railway line.

IGE proposes the following measures to address any perceived safety concerns:

- IGE are prepared to fund the installation of boom barriers and flashing lights at this level crossing (refer section 10);
- No vehicles longer than 20m in length will be permitted to use this access, as advised by Main Roads WA, due to storage distance between the railway line and Northam – York Road for vehicles turning right out from the access road (refer sections 3.1 and 7.4); and
- IGE propose construction of a left turn lane on the Northam – York Road on approach to the level crossing to provide safe storage space clear of the through traffic lane for any inbound vehicle that needs to wait for a train to clear the level crossing (refer sections 3.1 and 7.4).

12 Conclusions

This Transport Impact Statement has been prepared by Transcore on behalf of Infinite Green Energy (IGE) with regard to the proposed hydrogen production plant at the existing Northam solar farm. This report also takes into consideration potential future increase in the traffic movements to allow for potential future intensification of activity at the subject site.

The subject site is located approximately one kilometre east of the Northam townsite, on the northeast side of the Northam – York Road and the East Perth – Kalgoorlie railway line.

Access to the subject site is proposed to utilise the existing private level crossing of the railway line that currently provides access to the Northam Solar Farm from the Northam – York Road.

As this is a private level crossing it is currently subject to a Level Crossing Access Agreement (and Safety Interface Agreement) between DK West Investments Pty Ltd (the landowner) and Arc Infrastructure (the rail operator). Amendment to that agreement will be required to enable access for this proposed development.

No vehicles longer than 20m in length will be permitted to use this access, as advised by Main Roads WA, due to storage distance between the railway line and Northam – York Road for vehicles turning right out from the access road.

Traffic generation associated with the proposed development will be relatively low at only 30 to 40 vpd during the construction phase. Operational phase traffic generation may range from 26 vpd up to a potential future maximum of 128 vpd during the operational phase.

As safety is a very important consideration for this project, appropriate upgrading of the existing railway crossing and access road intersection on the Northam – York Road is proposed.

IGE propose construction of a left turn lane on the Northam – York Road on approach to the level crossing to provide safe storage space clear of the through traffic lane for any inbound vehicle that needs to wait for a train to clear the level crossing.

IGE are also fully supportive of and prepared to fund the installation of boom barriers and flashing lights at this level crossing to address any perceived safety concerns.

The existing sealed road section across the railway crossing would also be increased in length to connect to the Northam – York Road and extend at least 50m north of the railway crossing, and widened to 7m sealed width to accommodate simultaneous two-way truck traffic.

It is therefore concluded that traffic-related issues should not form an impediment to the approval of the proposed development.

Appendix A

PROPOSED SITE PLAN



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